

Non-US cite

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 10-276086

(43)Date of publication of application : 13.10.1998

(51)Int.Cl. H03L 7/14

(21)Application number : 10-010358 (71)Applicant : NORTHERN TELECOM LTD  
 (22)Date of filing : 22.01.1998 (72)Inventor : HOGEBOM JOHN GORDON

## (30)Priority

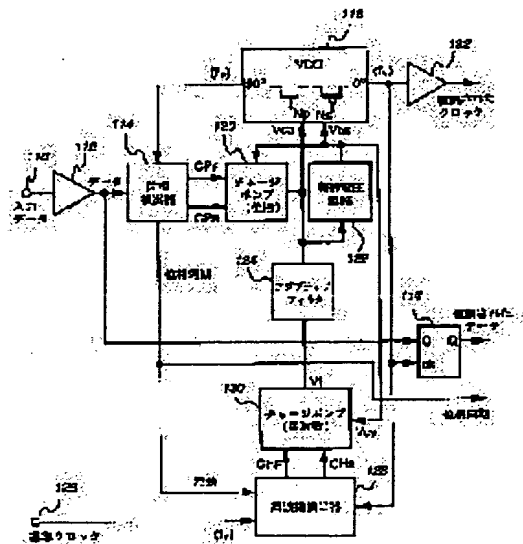
Priority number : 97 821149 Priority date : 20.03.1997 Priority country : US

## (54) PHASE LOCKED LOOP

## (57)Abstract:

PROBLEM TO BE SOLVED: To provide the phase locked loop(PLL) with small jitter and power consumption that is operated even with an input signal of a non-periodic structure such as data.

SOLUTION: The PLL is provided with a voltage controlled oscillator(VCO) 118, charge pumps 120, 130, a phase detector 114 and a frequency detector 128. The phase detector 114 detects a phase difference between an input signal and a VCO signal. A frequency difference between the input signal and the reference signal is detected by the frequency detector 128 independent of the phase detector 114. In a process to attain phase synchronization, the phase detector 114 and the frequency detector 128 are operated simultaneously. When the input signal is in existence, the VCO signal is phase-locked to the input signal. When no input signal is in existence, the VCO 118 is frequencylocked to a large number of reference signals to keep a frequency close to a desired bit speed. Thus, in the case that an input signal is received successively for a period without the input signal, the PLL assists considerably quick phase locking with reliability by avoiding extreme reaction of the system.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

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